This combined synopsis/solicitation is hereby amended to answers questions received from potential offerors, post additional pictures, drawings and an updated building floor plan.

1. QUESTION: The port location of the feedthroughs for the lighting inside the chamber (requirement 3.6) and is the contractor responsible for the circuit from the atmospheric side of the flange and if so what is the approximate distance to the power panel?

ANSWER: Yes, approximately 60 feet. The panel is on the wall behind the chamber on the East side.

2. QUESTION: Can NRL provide better pictures of the existing shroud and if possible provide existing drawings of the existing shrouds?

ANSWER: Additional pictures, drawings and an updated floor plan are hereby posted at http://heron.nrl.navy.mil/contracts/09se04.htm.

3. QUESTION: How long will the contractor have to install the new shrouds?

ANSWER: See: 7.0 Period of Performance/Delivery

4. QUESTION: Will the government provide two (2) week extension for the due date of bid responses?

ANSWER: Yes, the response date is hereby extended to 7/15/2009.

5. QUESTION: Is it possible for “a company” or a sub-contract personnel to view the chamber and take some photographs since we were unable to attend the site visit?

ANSWER: Not at this time. The only scheduled site visit was on 5/15/2009 and no photo's were allowed; due to project scheduling the Government is not able to provide for another site visit.

6. QUESTION: Can the facilities crane be used during the demo / installation?

ANSWER: Yes. the crane will be provided as Government Furnished Equipment (GFE).

7. QUESTION: What will the working hours be during the demo / installation?

ANSWER: Entry without escort is 0630 to 1800 must exit before 2100. If work needs to be done outside these hours, arrangements will be secured.

8. QUESTION: Are fire permits issued daily or weekly, and how are they obtained?

ANSWER: That is at the discretion of the NRL Fire Department.

9. QUESTION: Will workers receive badges therefore no escorts required?

ANSWER: Yes the workers will receive badges. The workers will need escorts if they work out of normal hours, weekends or Federal holidays. Normal hours are 0630 to 2100.

10. QUESTION: Where will power be located for the new chamber internal lightening?

ANSWER: See answer to question 1.

11. QUESTION: What ports are to be used for the Thermo Couple and Power Feedthru's?

ANSWER: The power will go through the small port on the west side nearest the chamber door. The thermocouples will use the top 8"port on the west side nearest the chamber door. The door is on the South end and the back of the chamber faces North.

12. QUESTION: What is the piping size from the Thermal Conditioning Units to the shroud?

ANSWER: The piping is 5" at the blowers, 6" in the middle and 4" at the chamber.

13. QUESTION: 100 watts per/sq ft appears to apply to the LN2 mode, what is the heat load in GN2 mode

ANSWER: Since the facility does not have the capability at this time to flood the shrouds you may prove your design by analysis. We will test the shrouds for temperature uniformity at -1500C, 200C and +500C.

14. QUESTION: Can a functional equivalent to the Geir Dunkle DB100 Infrared Reflectometer be used?

ANSWER: The NRL will use a Geir Dunkle DB100 to verify the surfaces meet our specification.

15. QUESTION: If the GN2 heat load needs to be demonstrated, who provides the actual heat load?

ANSWER: No heat load will be required. See Answer to question 13.

16. QUESTION: Does the existing shroud and TCU handle the specified heat load requirement?

ANSWER: The existing shroud and TCU handles the specified heat load requirement.

17. QUESTION: Preferred position of internal lights?

ANSWER: The lighting in the chamber should be as evenly distributed as possible so that a test article in the chamber is well lit on all sides.

18. QUESTION: Does the chamber contain any lead paint?

ANSWER: See answer to question 25.

19. QUESTION: Will the government provide existing shroud and piping drawings?

ANSWER: See answer to question 2.

20. QUESTION: Will the Government provide existing chamber drawings (hard-point locations, beam dimensions and connection details)?

ANSWER: See answer to question 2.

21. QUESTION: Will the Government provide as much info on Tenny Thermal Conditioning Units as possible (CFM)?

ANSWER: Tenney is unable to provide any information on the TCUs. The information in the documentation is: temperature range is -1750C to +1500C and a pressure range of 3psig to 50psig. We are providing pictures of the blowers. The answer to question 31 gives the tested pressure drop.

22. QUESTION: What is the previous history of the chamber? Was it ever used in conjunction with hazardous materials?

ANSWER: The RGA shows no signs of any hazardous materials. The chamber has been baked out and tested for several programs with no signs of any hazardous materials.

23. QUESTION: How old is the chamber?

ANSWER: The chamber was built about 1975.

24. QUESTION: Who is/was the chamber manufacturer?

ANSWER: Tenney Engineering, Inc., Union NJ. built the shrouds, TCU's and plumbing. The Hodge Boiler Works, East Boston, MA. built the pressure vessel.

25. QUESTION: Is the chamber painted with lead based paint?

ANSWER: The interior is not painted with lead based paint. The last paint job on the exterior was done with Rust-OLEUM. It is unknown what the original exterior paint is.

26. QUESTION: Are there electronic or hardcopy detail drawings available of the:

Chamber
Shroud
Facility
GN2 TCU Piping schematics
LN2 systems
Details of existing shroud sections in/out chamber wall feedthrus.

ANSWER: See answer to question 2.

27. QUESTION: Regarding the existing GN2 TCU units, what are the rated capacities?

ANSWER: See answer to question 21.

28. QUESTION: What is the temperature range of the TCU's?

ANSWER: -1750 C to +1500 C

29. QUESTION: Does the TCU run under Constant Density control or Constant Pressure Control? If constant density, what is the density? If
Constant pressure, what is the pressure?

ANSWER: Constant Density with a maximum pressure of 50 psig. The current control system allows the Density Set Point to be changed. The current Density Set Point is 0.30.

30. QUESTION: What is the flow rate / CFM rating of the TCU's.?

ANSWER: See answer to question 21.

31. QUESTION: What is the pressure drop across shroud zone(s)?

ANSWER: The measured pressure drop at 200C is 1.3psi measured at test ports at the inlet and outlet of the blowers. Each TCU measures approximately the same pressure drop.

32. QUESTION: Does the existing shroud meet the uniformity requirement of ±5ºC with a test load of 100 watts per square foot as specified in the SOW, paragraph 3.18 using the existing TCUs?

ANSWER: Yes.

33. QUESTION: Does vendor supply an evenly distributed heat load (100 watts/ft2) to test shroud performance? Or does NRL have an existing heat load system?

ANSWER: Not needed. See answer to question 13.

34. Does vendor supply instrumentation system to record shroud temperature values during ATP?

ANSWER: The NRL will provide the data acquisition system to record the shroud temperatures during the ATP.

35. QUESTION: Can the shroud performance be demonstrated via analysis?

ANSWER: See answer to question 13.

36. QUESTION: Is there a port to be specified for housing the feedthroughs for the thermocouples and chamber lighting power?

ANSWER: See answer to question 11.

37. QUESTION: Where does the chamber lighting circuit(s) power connect to?

ANSWER: See answer to question 1.

38. QUESTION: Paragraph 3.5 of the SOW states, “The shroud shall be able to withstand a 250 lb. person jumping from a height of 3 feet onto the shroud without damage.”……..

Does this requirement only pertain to the lower sections of the shroud as with the rest of the requirement of paragraph 3.5?

ANSWER: Yes this only pertains to the lower sections of the shroud.

39. QUESTION: What will be the crane availability be during the course of this work?

ANSWER: See answer to question 6.

40. QUESTION: Are other visits to the chamber system allowed? For instance – if one of our installation contractors may want to visit the site.

ANSWER: See answer to question 5.

41. QUESTION: For operation and design, will the shroud be cooled with a TCU prior to LN2 flooding?

ANSWER: Yes the shroud would be cooled to -1750 C prior to flooding.

42. QUESTION: What are the temperatures, flows, and operating pressures of the TCU's?

ANSWER: The pressure can range from 5 to 50 psig. The temperature range is -1750C to +1500C on nitrogen gas. The flow will have to be calculated from the information in the drawings provided. The motor for the blower is rated for 3450 rpm.

43. QUESTION: Are there permissible pressure drops that can be taken across the shroud during various stages or temperatures of the TCU operation?

ANSWER: The TCU was designed to maintain approximately the same mass flow at all temperatures. To accomplish this pressure in the system was varied between 3psig and 50psig.

44. QUESTION: When the shroud is flooded with LN2, will it be pumped circulation or be vented to atmosphere? Is there an intended procedure for the shroud flooding operation?

ANSWER: The original operation used a pumped system with a regulator/throttling valve to maintain pressure in the shrouds to prevent the liquid from boiling because of the heat load. After the liquid had passed through the shrouds it was returned to the storage tank. The shrouds would be cooled to -1750C then the TCU isolation valves would be closed and the LN2 valves would be opened to further cool the shrouds until they are flooded. The old system does not currently exist. That part of the system would be constructed sometime in the future unless it is shown that venting to atmosphere is preferable.

45. QUESTION: Paragraph 3.9 should be reviewed for correctness of the sentences. The second sentence needs to be reworked. What is the second sentence in paragraph 3.9 trying to state?

ANSWER: All of 3.9 deal with the Thermocouples for the shrouds. The second sentence states that the vendor will submit a design for the thermocouple location and thermocouple mounting method to the Contracting Officer Representative (COR) for approval.

46. QUESTION: Will the “Old Shroud” become the property of the contracted vendor for the project?

ANSWER: Yes.

47. QUESTION: Are there specific clean room levels that must be adhered to or maintained during the shroud removal and installation work?

ANSWER: Not during the removal or installation but once installed the chamber and shroud will meet the requirement in 3.23.

48. QUESTION: Will cryogens and test gas for commissioning and testing is the responsibility of NRL?

ANSWER: Yes.

49. QUESTION: Is there a list of NRL approved contractors which can be called upon for the field installation and welding phase of the program?

ANSWER: No

50. QUESTION: Will there be an extension of the due date for the proposals?

ANSWER: See Answer to question 4.

51. QUESTION: Are the vendors able to get the original shroud and vessel drawings so that we can make our proposals more accurate?

ANSWER: See Answer to question 2.

52. QUESTION: Are the louvers in the existing shroud for the cryopumps to be duplicated in the new shroud?

ANSWER: See sections 3.13 and 3.14 of the requirements.

53. QUESTION: Are all of the ports in the vessel to be duplicated in the shroud or just the added ones?

ANSWER: All ports.

54. QUESTION: Para. 2.1. What is the inlet and outlet fluid connection sizes for the five control zones and what type of control valve is used for flow balance through each zone?

ANSWER: Each zone has a separate TCU and can be controlled independent of the other zones except for pressure. All zones share the same pressure regulation.

55. QUESTION: Para. 2.1. Will the same control valves and fluid connection be used for both liquid nitrogen and gaseous nitrogen service?

ANSWER: All controls will remain as they are now. The only changes are internal to the chamber.

56. QUESTION: Para. 2.1. Are the control valves manual, air operated or other type of control valve?

ANSWER: The control valves are air operated.

57. QUESTION: Para. 2.1. What is the liquid nitrogen and gaseous nitrogen flow-rates available to the shroud zones and the pressure drop allowed across the shroud zones for liquid nitrogen and gaseous nitrogen operation?

ANSWER: The current system was designed to supply 25 GPM of liquid nitrogen at 50 psig to the 5 thermal shrouds and gaseous nitrogen at 1000 SCFH.

58. QUESTION: Para. 2.1. The location of the zone penetrations and size through the chamber are not shown on any of the Big Blue drawings. Could you provide this information?

ANSWER: See answer to question 12. The locations are not shown on any drawings and will have to be measured. Some additional pictures show the openings in the back of the chamber as it was being assembled.

59. QUESTION: Para. 3.18. The ΔT uniformity defined is ± 5˚C w/ a test load of 100 Watts per square feet on all shroud surfaces. Is this when the shroud is operating with liquid nitrogen and gaseous nitrogen fluid or is it liquid nitrogen only?

ANSWER: See answer to question 13.

60. QUESTION: Para. 3.18. Assuming this 100 Watts per square foot test heat load is at liquid nitrogen conditions, what is the maximum heat load on the shroud at the extreme temperature ranges for the gaseous nitrogen operation (-180˚C and + 150˚C)?

ANSWER: See answer to question 13.

61. QUESTION: Para. 3.18. Does the ± 5˚C ΔT refer to the temperature between the tubes only or is it from the fluid inlet to outlet temperature plus the temperature between the tubes?

ANSWER: This refers to the temperature measured on the inside surface of the shroud. For the acceptance test we will place additional thermocouples on the surface of the shroud that would face the test article to determine the ΔT across the shroud. Also see answer for question 13.

62. QUESTION: Para 5.1. Is the old shroud radio active or contain any other contaminants that are environmentally unsafe or require special handling or conditioning prior to disposal?

ANSWER: The old shroud does not contain any known contaminants.

63. QUESTION: Para. 5.1. Is the old shroud cylinder section on a removal structural assembly that will allow for removal on a vendor provided cart using existing rollers?

ANSWER: Each quadrant of the cylindrical section is on rollers that should allow it to roll out of the chamber and onto a support structure.

64. QUESTION: Building A59 First Floor Plan. Where is the Big Blue Chamber located in reference to the floor plan layout and where and what size of access doors are available for removing the old shroud and access for bringing in the new shroud?

ANSWER: The location is shown on the floor plan, see answer to question 2. The minimum door size in the building along the path to access the chamber for removal and installation of the shroud is 20 feet x 20 feet.